

## REMARKS

The Application has been carefully reviewed in light of the Office Action dated March 14, 2003 (Paper No. 12). Claims 1 to 19 and 24 to 38 are in the application, of which Claims 1, 11, 24 and 33 to 38 are the independent claims. Claims 1, 7, 9, 11, 13, 14, 16, 18, 24, 29, 31 and 33 to 38 are being amended herein. Reconsideration and further examination are respectfully requested.

With respect to the drawings, Figure 3A is being amended herein to include a prior art legend. With respect to the objection to the drawings as not showing a controller as recited in Claim 1, it is submitted that the Figure 2 provides one example of a controller having the claimed features, i.e., central processing unit 28. Accordingly, Applicants do not believe that any change to the drawings and/or the claims is necessary.

The claims have been objected to based on alleged informalities. More particularly, Claims 1, 11 and 33 to 35 are objected to, and the Office Action suggests that each occurrence of the "the bus" wording be amended to read "the internal bus". It is believed that the wording of these claims is sufficiently unambiguous and understandable. Accordingly, no change is believed to be necessary. In addition and with respect to Claims 2 to 10, 12 to 19 and 25 to 32, the Office Action indicates that the wording in the preamble be changed from "A system" to "The system". The language used in the preamble of these claims is believed to be a commonly-used format, and is further believed to be sufficiently clear and understandable. Accordingly, no change is believed to be necessary.

Claims 7 to 9, 11 to 18, 29 to 31 and 33 to 35 have been rejected under 35 U.S.C. § 112, second paragraph. Applicants have reviewed the claims in light of the

rejection and have amended the claims as deemed appropriate. Reconsideration and withdrawal of the rejection are respectfully requested.

Turning to the art rejections, Claims 1 to 4, 10 to 13, 19, 24 to 26 and 32 to 38 have been rejected under 35 U.S.C. § 103(a) over Stancil in view of the Technische University's "Packet: header and data" (Technische) and TechEncyclopedia's "TCP/IP abc's" (TechEncyclopedia), and Claims 5 to 9, 14 to 18, 20 to 23 and 27 to 31 have been rejected under 35 U.S.C. § 103(a) over Stancil in view of Technische, TechEncyclopedia and Moore's "IEEE 1394: The Cable Connection to Complete The Digital Revolution".

The present invention relates to a system for transmitting and receiving data over a IEEE 1394 standard bus using the same broadcast channel.

Conventionally, the IEEE 1394 standard bus (1394 bus) provides for isochronous transmission of data packets. Any device that uses the IEEE 1394 standard for isochronous transmission of data, is assigned an isochronous channel, ranging in value from 0 to 63. The channel is assigned to a specific device until it is released by that device.

However, many different digital video cameras are designed to transmit over a single preset channel number, or "broadcast channel" for transmitting digital video data packets over the 1394 bus. Because the IEEE 1394 standard does not allow more than one device to use the same isochronous channel at one time, only one of the digital video cameras is permitted isochronous bandwidth and use of channel 63 to perform transmission of isochronous data on the bus. By using multiple 1394 buses, it is possible to allow two or more digital video cameras to use the same channel designation, each on a different 1394 bus.

In a February 27, 2003 telephone interview, a summary of which was attached to the present Office Action, the Examiner inquired with respect to the use of multiple 1394 buses.<sup>1</sup>

In response and as described in the present application, the present invention uses multiple 1394 buses to solve the above-discussed problem. However, there is the further problem of differentiating between different devices when each device uses the same channel designation, even in a case that these devices use different 1394 buses. The present invention solves this problem, and interprets an identification (ID) header, which is different from the 1394 header, to identify which of multiple interfaces should receive data, and also uses the ID header to build the 1394 header.

Turning to the particular language of the claims, Claim 1 defines a system for transmitting and receiving data packets formatted in IEEE 1394 standard between devices using a same broadcast channel, comprising a controller interfaced to an internal bus, a first interface connected to the bus, and a second interface connected to the bus, wherein the controller is configured for 1) receiving data from the bus, attaching an identification (ID) header to the received data, and retransmitting the received data with the ID header onto the bus; and 2) receiving data with the ID header attached thereto, interpreting the ID header to identify which of the first or second interfaces should receive the data, and transmitting the data over the bus to the identified interface, wherein the ID header is other than a 1394 header formatted in IEEE 1394 standard and contains

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<sup>1</sup>In this regard and during the February 27, 2003 interview, the Examiner informed Applicant's undersigned attorney that he would not take action on the case for at least a week. When Applicant's representative contacted the Examiner well within this time frame, the Examiner informed her that he had instead elected to issue an Office Action.

information about the data, and wherein the 1394 header is built based on information contained in the ID header.

To illustrate by way of example with reference to Figure 2, CPU 28 interfaces with a first 1394 interface, comprising layers 20 and 21, and CPU 28 interfaces with a second 1394 interface, comprising layers 25 and 26, via internal bus 22. CPU 28 is configured to receive data from bus 22, attach an ID header to the received data, and retransmit the received data with the ID header onto bus 22; and to receive data with the ID header attached thereto, interpret the ID header to identify which of the first or second interfaces should receive the data, and transmit the data over the bus to the identified interface. In addition to being used to identify which of the first and second interfaces should receive the data, the ID header, which is other than a 1394 header formatted in IEEE 1394 standard, contains information about the data and is used to build the 1394 header.

Stancil is not seen to teach or suggest the above-described features of Claim 1. Most particularly, Stancil is not seen to teach or suggest interpreting an ID header to determine which of a first and second interface should receive the data, and using the ID header, which is other than a 1394 header, to build the 1394 based on information contained in the ID header.

Rather, Stancil is seen to describe a hardware configuration in which hardware devices can be slipped in and out of device bays easily in a manner similar to the laptop computer bays that accept a battery, floppy disk drive, CD-ROM drive, etc. Each device bay has a 1394 port and a USB port. In this regard, the problem intended to be solved by Stancil is the need for a secondary 1394 PHY host controller bus driver and associated USB device bay controller, which occurs when a primary 1394 PHY host

controller is incorporated on the motherboard and the chassis has multiple device bays. To address this problem, Stancil describes mounting a plurality of 1394 ports on the riser card, which are coupled to a single 1394 PHY host controller and a single bus driver.

Nothing in Stancil is seen to teach or to suggest attaching an ID header to data received from an internal bus, or removing an ID header from data received from the internal bus, interpreting the ID header to identify the interface that should receive the data, and using the ID header, which is other than a 1394 header, to build the 1394 header.

The remaining references, namely Technische and TechEncyclopedia, are not seen to remedy the deficiencies noted with respect to Stancil. Technische and TechEncyclopedia are merely seen to describe a network packet. These references are not seen to disclose interpreting an ID header, which is other than a 1394 header, to determine which interface should receive data, and building a 1394 header based on information contained in an ID header.

To illustrate by way of an analogy and as described in TechEncyclopedia, a TCP/IP packet identifies an application for delivery based on an IP address, which identifies a network node, and a port designation, which identifies an application on the network node. A port designation may identify an FTP (File Transfer Protocol) application, for example. However, a conflict arises when two instances of the same application on the same network node use the same port designation. TechEncyclopedia, and Technische for that matter, is not seen to address this problem. Use of a conventional packet, such as a TCP/IP packet containing an IP address and a port designation, is not seen to be able to address a conflict that arises when two applications use the same port designation.

As discussed above, a conflict arises when two devices, albeit on different 1394 buses, use the same channel designation. A network header, such as that shown in Figure 3D of the present application, is not seen to provide information sufficient to resolve the conflict. The channel designation in the 1394 data packet shown in Figure 3A is also not seen to provide sufficient information to resolve the conflict, since the same channel designation is used by each of the devices. However, the ID header of the present invention, an example of which is shown in Figure 3D, is other than a 1394 header, is interpreted to identify which interface should receive the data, and is used to build the 1394 header.

Nothing in the applied art, namely Stancil, TechEncyclopedia and Technische, is seen to disclose these features of the present invention.

Therefore, for at least the foregoing reasons, Claim 1 is believed to be in condition for allowance. Further, Applicants submit that Claims 11, 24 and 33 to 38 are believed to be in condition for allowance for at least the same reasons.

The remaining claims are each dependent from the independent claims discussed above and are therefore believed patentable for the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

  
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